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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/892,741	06/28/2001	Takashi Yoshida	2001_0931A	3618

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WENDEROTH, LIND & PONACK, L.L.P.
2033 K STREET N. W.
SUITE 800
WASHINGTON, DC 20006-1021

EXAMINER	
AKHAVANNIK, HUSSEIN	
ART UNIT	**PAPER NUMBER**
2621	

DATE MAILED: 08/13/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/892,741	YOSHIDA ET AL.	
	Examiner	Art Unit	
	Hussein Akhavannik	2621	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-11 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-11 is/are rejected.

7)☒ Claim(s) 1-3 and 6-11 is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on 28 June 2001 is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date 2,3.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Specification

1. The disclosure is objected to because of the following informalities:

All instances of "rudder" should be changed to "steering" because land vehicles, such as automobiles, do not have rudders. Rudders are defined as "A vertically hinged plate of metal, fiberglass, or wood mounted at the stern of a ship or boat for directing its course" in the American Heritage Dictionary of the English Language, Fourth Edition.

Appropriate correction is required.

2. Claims 1-3 and 6-11 are objected to because of the following informalities:

All instances of "rudder" should be changed to "steering".

Appropriate correction is required.

3. The abstract of the disclosure is objected to because "rudder" should be changed to "steering". Correction is required. See MPEP § 608.01(b).

Drawings

4. The drawings are objected to because "Rudder" should be changed to "Steering" in figure 1, reference number 3; figure 13; and figure 16, reference number S5.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must

be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1-3 and 5-11 are rejected under 35 U.S.C. 102(b) as being anticipated by Schofield et al (U.S. Patent No. 5,949,331).

Referring to claim 1, which is representative of claims 6, 8, and 10,

i. An image receiving part for receiving images of an area around the vehicle and the images including an overlapped region is illustrated by Schofield et al 1 by the image capture devices 14 and 16. The overlapping regions are illustrated by Schofield et al in figure 1 by reference numbers 32 and 34 and explained in column 5, line 66 to column 6, line 4.

ii. A rudder angle receiving part for receiving the rudder angle detected by the rudder angle sensor is explained by Schofield et al in column 10, lines 40-44 by the monitoring of the vehicle steering system.

iii. An image processing part for performing pixel selection from the captured images received by the image receiving part according to the rudder angle received by the rudder angle receiving part and based on a result of the pixel selection to generate a drive assistance image is explained by Schofield et al in column 5, lines 50-55, column 10, lines 28-55, and column 11, lines 6-27 and illustrated in figures 3 and 6. Schofield et al explains an image processor (18 in figure 5) creating a composite image made up of the images output from the three cameras 14 and 16. The images processor inherently performs pixel selection because the captured images are digital (column 7, lines 1-17) and the processor must select pixels from the three captured images to create the composite image. The image processor further performs pixel selection according to the steering angle to illustrate the projected path of the vehicle (figure 6) by selecting the appropriate pixels in the drive assistance image to alter. The image processor may also select pixels corresponding to vehicles that are too close and alter the pixels in order to alert the driver. Therefore, the image processor of Schofield et al selects pixels according to the steering angle and the images received.

Referring to claim 2, which is representative of claims 7, 9, and 11,

i. A table storing part for storing a mapping table showing a correspondence between the drive assistant image and the captured images on a pixel basis is illustrated by Schofield et al in figure 11 and explained in column 8, lines 11-45. The tables stores a

mapping table of an object to be displayed on the drive assistant image from a side camera (n1) and the center camera (n2). The pixels of the captured images are selected (correspond) from the pixels in the table corresponding to part iii of this claim.

ii. In the mapping table, a pixel belonging to the overlapped region in the drive assistant image corresponds to a plurality of pixels in the captured images according to rudder angle received by the rudder angle receiving part is inherent in the system of Schofield et al because a pixel in the overlapping regions 32 and 34 in figure 1 corresponds to at least two pixels of the captured images.

iii. According to the mapping table stored in the table storing part, the image processing part selecting the pixels from each of the captured image received by the image receiving part is explained by Schofield et al in column 8, line 46 to column 9, line 5, wherein the driver assistant image is created from pixels corresponding to the object from the pixels stored in the mapping table for each captured image (n1 and n2).

Referring to claim 3,

i. A trajectory deriving part for deriving a trajectory estimated for the vehicle to take in a course of time based on the rudder angle received by the rudder angle receiving part is explained by Schofield et al in column 10, lines 35-44 wherein the anticipated path of movement for the vehicle is derived as a function of the vehicle direction of travel.

ii. A trajectory rendering part for rendering the trajectory derived by the trajectory deriving part on the drive assistance image generated by the image processing part is illustrated by Schofield et al in figure 6 and explained in column 10, lines 28-35.

Referring to claim 5, the image processing part generating the drive assistant image showing the area around the vehicle viewed from a predetermined virtual camera is illustrated by Schofield et al in figure 3 wherein the area behind the vehicle is displayed.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

8. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Schofield et al in view of Yasui et al (U.S. Patent No. 6,344,805).

Referring to claim 4,

i. An image storing part for storing a vehicle image representing the vehicle is not explicitly explained by Schofield et al. However, Yasui et al explain that an image of the vehicle body is superimposed onto a bird's eye view of the surrounding area in column 4, lines 45-53 and illustrate an image memory capable of storing the vehicle image in figure 5 by reference number 52.

ii. A vehicle rendering part for rendering the vehicle image stored in the image storing part on the drive assistant image generated by the image processing part is not explicitly explained by Schofield et al. However, Yasui et al illustrate a vehicle rendering part that superimposes the image of the vehicle onto a drive assistant image in figure 3. Yasui et al explain that the drive assistant image is generated by a plurality of cameras in column 4, lines 45-53. Yasui et al explain that the drive assistant image is

beneficial so that the driver can easily and quickly park the vehicle with accuracy and safety in column 1, line 66 to column 2, line 8. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to store an image of the vehicle and render the image on the drive assistant image as suggested by Yasui et al in the system of Schofield et al because the driver will drive more accurately and safely by knowing his/her relation to the surrounding areas.

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Lee (U.S. Patent No. 5,680,123) – To exhibit selecting an image to display to a driver depending on the turn signal switch as illustrated in figure 5.

Okuda (U.S. Patent No. 6,463,363) – To exhibit predicting the path of a vehicle and displaying the predicted path on a drive assistant image as explained in the abstract and illustrated in figures 1 and 2.

Iisaka et al (U.S. Patent No. 6,366,221) – To exhibit determining the path of a vehicle by measuring the rudder angle and displaying the image of the vehicle on a drive assistant image as illustrated in figure 5B.

Asayama (U.S. Patent No. 5,214,408) – To exhibit multiple cameras imaging the front of a vehicle and a steering angle sensor to define hazard regions in front of a vehicle as illustrated in figure 1.

Nakajima et al (U.S. Patent No. 6,285,778) – To exhibit predicting the position of a vehicle by using the steering angle and detecting surrounding objects as explained in the abstract.

Nobori et al (U.S. Patent Pub. No. 2003/0,222,983) – To exhibit producing a drive assistant image by selecting either a first or second captured image according the direction detection as illustrated in figure 15.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hussein Akhavannik whose telephone number is (703)306-4049. The examiner can normally be reached on M-F 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Leo H. Boudreau can be reached on (703)305-4706. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Hussein Akhavannik H.A.
August 4, 2004

LEO BOUDREAU
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600